

**EXHIBIT A**  
**Mill Creek Stream Restoration and Off-channel Wetland Enhancement Project**  
**Statement of Work**

Under direction of the Department of Fish and Game, and under the following conditions and terms, the U.S. Fish and Wildlife Service will:

1. Improve spawning and rearing habitat by increasing habitat diversity and expanding riparian canopy for Chinook and coho salmon and steelhead trout in a selected section of Mill Creek, tributary to Hall Creek, tributary to Mad River in Humboldt County. The objectives are to (1) reconnect Mill Creek to Hall Creek by reconstructing 950 linear feet of stream channel; (2) increase channel heterogeneity by the addition of at least 10 pieces of large woody debris; (3) increase the volume of residual pools and increase spring recharge into the riparian aquifer by enhancing a 0.5 acre off-channel wetland; and (4) improve the riparian zone by planting a minimum of 200 native conifers, 150 deciduous trees, and 250 willow stakes throughout the project site.
2. Conduct work on Mill Creek at the confluence with Hall Creek approximately 0.4 miles upstream from the confluence of Hall Creek with Mad River. The project is located in Township 6N, Range 1E, Section 13 of the Arcata North 7.5 Minute U.S.G.S. Quadrangle, 40.903158 north, 124.007982 west as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. Habitat improvements will be accomplished by the reconstruction of 950 feet of channel on lower Mill Creek. Mill Creek will remain in its current location from the start of the project area to a point approximately 30 feet below the bridge. The channel will be excavated to provide a slope of 1.7 percent to match the channel slope upstream. This slope will be continued through the bridge, which will produce a confined channel. Below the bridge, the channel will turn to the west and leave the location of the existing channel. The channel will be located on the west floodplain. The channel will remain confined, but also have an inset floodplain, located between the west levee of the existing channel and the west entrance road. About 100 feet below the bridge, there will be a break in grade. The channel will remain confined. The cross section will be narrowed at this location to increase flow depth and to maintain sediment transport capacity. The channel will tie into the existing Mill Creek channel near the tree-line, and then enter Hall Creek. Large woody debris will be added to the channel and where possible, lower wet areas (e.g. depressions) will be placed in the inset floodplain.

The wetland on the east side of the Mill Creek channel will be enhanced. The wetland will be excavated to produce two large depressions, totaling 0.5 acre in size. The first depression will serve to trap sediments (although sediment supply from the two tributaries is minimal). The second depression will be excavated to an elevation equivalent to the thalweg depth in the restored Mill Creek channel. The wetland will flow into Hall Creek through an existing channel connection. The wetland will be excavated deep enough to

store enough water so that it will remain permanently flooded through the dry summer. The wetland will then be planted with 200 native conifers (Sitka spruce, coast redwood), 150 deciduous trees (red alder, big-leaf maple), and 250 willow stakes.

4. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings, after a period of three years.
5. The Grantee shall notify the Grant Manager a minimum of five working days before any fish bearing stream reaches are dewatered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other aquatic species from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
  - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
  - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
  - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
  - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
  - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
6. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*, Flosi et al., the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part XI, January 2004 and Part XII, April 2009.
7. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on a CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 31 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
  - Grant number
  - Project name
  - Geographic area (e.g., watershed name)

- Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
- Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
- Project start and end dates and the number of person hours expended
- Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
- Expected benefits to anadromous salmonids from the project
- Labeled before and after photographs of any restoration activities and techniques
- Specific project access using public and private roads and trails, with landowner name and address
- Complete as built project description
- Results of the longitudinal and cross sections surveys
- A map depicting photographic monitoring sites; topographic survey end points; off-channel habitat construction / enhancement sites and LWD placement locations
- Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (HI, HR, HS) (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
  - Design spec achieved
  - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Instream Habitat Projects (HI)

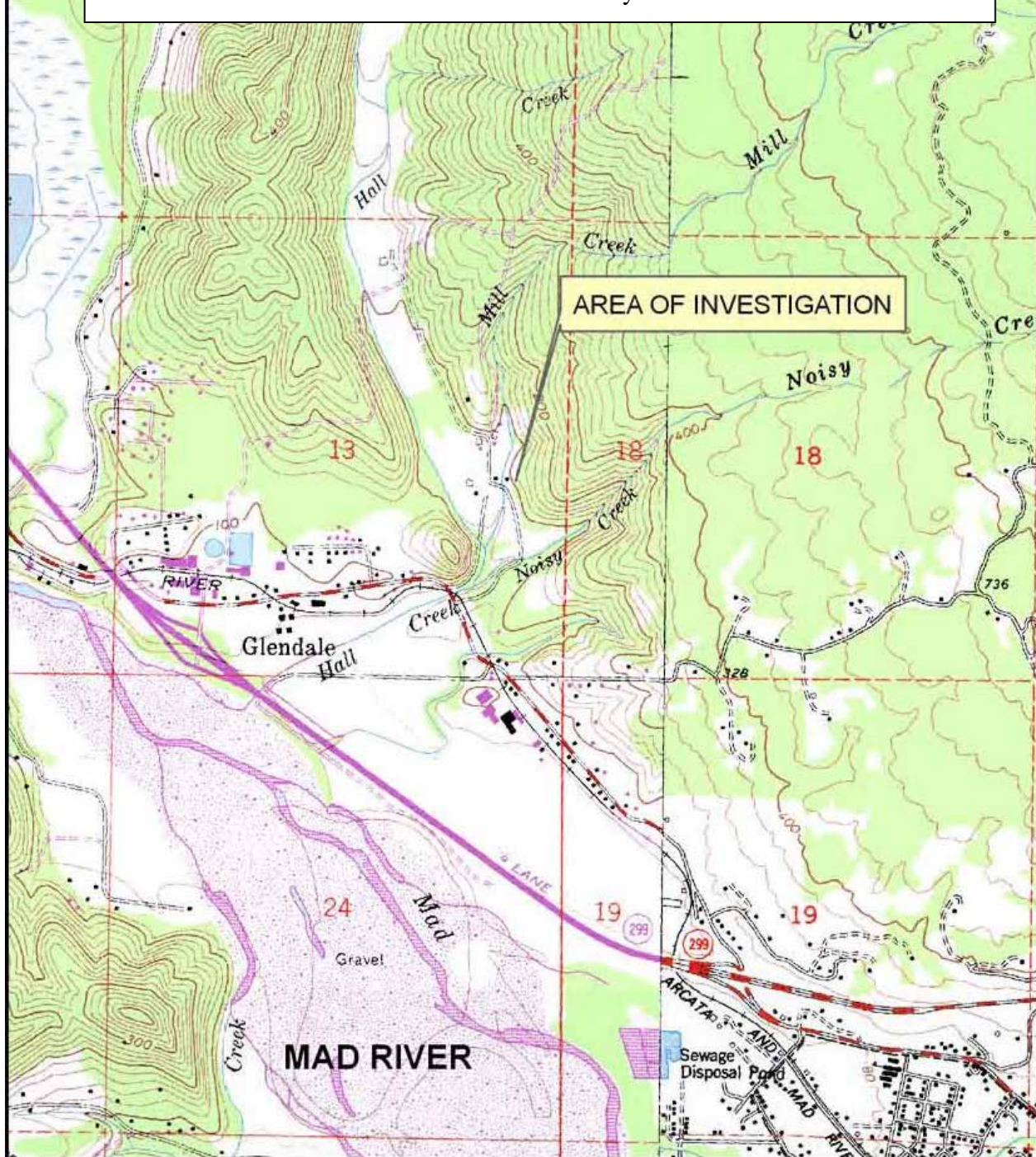
- Description of instream treatments used, including site locations referenced to an established landmark, number of treatment sites, and any modifications to site/treatment design.
- Type of materials used for channel structure placement, select from: individual logs (unanchored); logs fastened together (logjam); rocks/boulders (unanchored); rocks/boulders (fastened or anchored); stumps with roots attached (root wads); weirs; gabions; deflectors/barbs; or other engineered structures
- Miles of stream treated with channel structure placement
- Number of instream pools created by structure placement
- Number of structures placed in channel

- Type of channel reconfiguration and connectivity, select from: creation / connection to off channel habitat; creation of instream pools; channel bed restored; or meanders added
- Miles of stream treated for channel reconfiguration and connectivity
- Number of instream pools created for channel reconfiguration.

Riparian Habitat Projects (HR, HS)

- Miles of stream treated overall, count stream reach only once.
  - Miles of riparian stream bank treated, measure both sides of the bank.
  - Total acres of riparian area treated.
  - Acres of riparian area planted.
  - Species scientific names of plants planted.
8. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Mill Creek Stream Restoration and Off-channel Wetland Enhancement Project.

Exhibit C  
Mill Creek Stream Restoration and Off-Channel Wetland Enhancement Project  
Project Location Map 1  
T6N, R1E, S13 Arcata North Quad  
Humboldt County

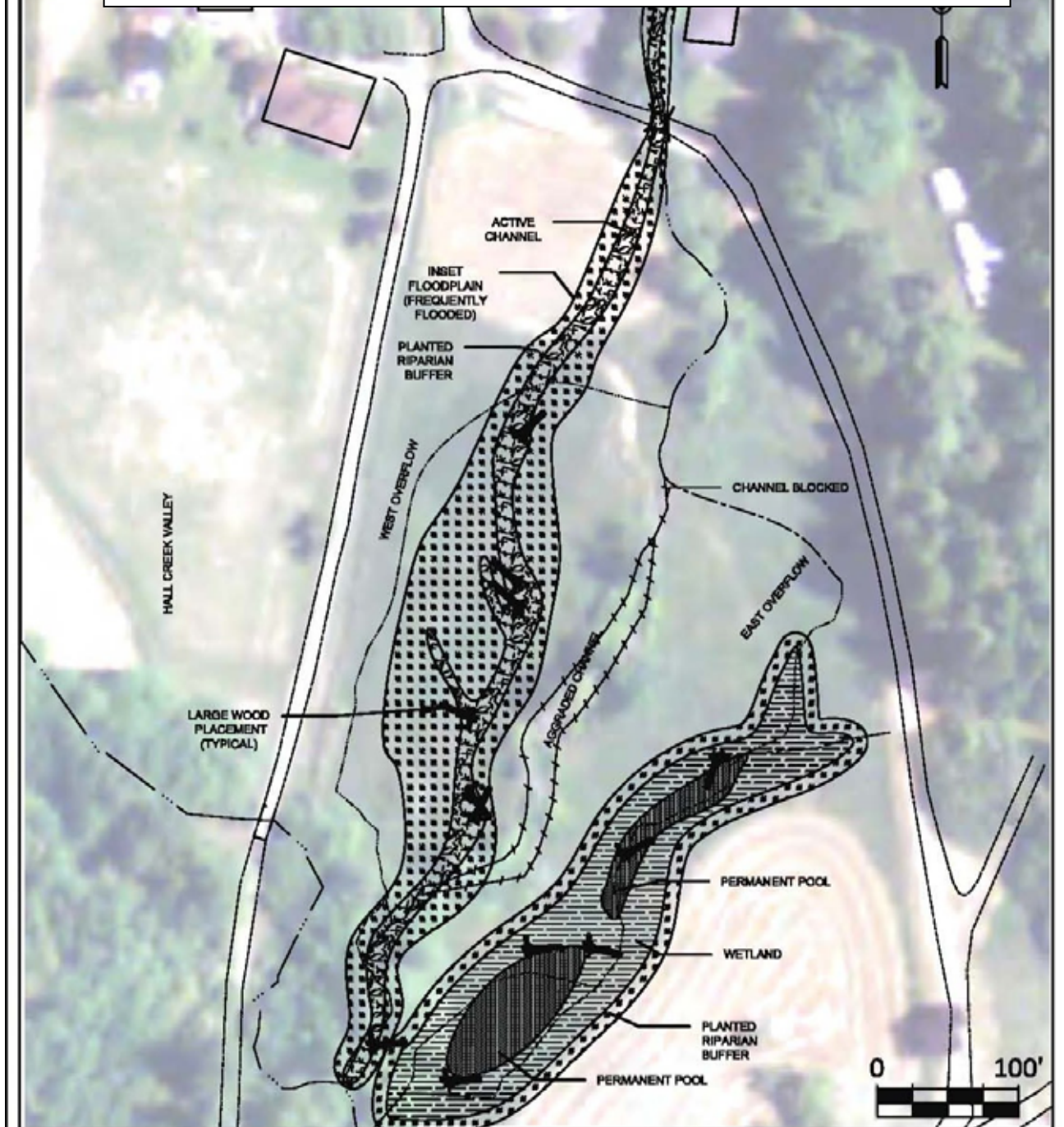


SOURCE: USGS 7-1/2" TOPOGRAPHIC MAP  
- ARCATA NORTH, CA

0 500 1,000 2,000 3,000 4,000  
Feet



Exhibit C  
 Mill Creek Stream Restoration and Off-Channel Wetland Enhancement Project  
 Project Location Map 2  
 T6N, R1E, S13 Arcata North Quad  
 Humboldt County



U.S. FISH AND WILDLIFE SERVICE  
 ARCATA FISH AND WILDLIFE OFFICE  
 CONSERVATION PARTNERSHIPS PROGRAM  
 ARCATA, CA 95519  
 707-822-7201

FIGURE 5:  
 MILL CREEK RESTORATION PROJECT  
 CONCEPT DESIGN ELEMENTS

AERIAL PHOTOGRAPH: NAIP 2005

SCALE: AS SHOWN

PREPARED BY: CCS

CHECKED BY: CCS

DATE: 05/07/09

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible Species within the Arcata North and Surrounding Quads for:

Mill Creek Stream Restoration and Off-Channel Wetland Enhancement Project

T6N, R1E, S13

United States

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 California clapper rail <i>Rallus longirostris obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	
2 California globe mallow <i>Iliamna latibracteata</i>	PDMAL0K040			G3	S2.2	1B.2
3 Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040			G5	S3	
4 Del Norte salamander <i>Plethodon elongatus</i>	AAAAD12050			G4	S3	SC
5 Howell's montia <i>Montia howellii</i>	PDPOR05070			G3G4	S3	2.2
6 Humboldt Bay owl's-clover <i>Castilleja ambigua ssp. humboldtiensis</i>	PDSCR0D402			G4T2	S2.2	1B.2
7 Humboldt Bay wallflower <i>Erysimum menziesii ssp. eurekaense</i>	PDBRA160E2	Endangered	Endangered	G3?T1	S1.1	1B.1
8 Lyngbye's sedge <i>Carex lyngbyei</i>	PMCYP037Y0			G5	S2.2	2.2
9 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
10 Northern Foredune Grassland	CTT21211CA			G1	S1.1	
11 Oregon coast paintbrush <i>Castilleja affinis ssp. litoralis</i>	PDSCR0D012			G4G5T4	S2.2	2.2
12 Oregon goldthread <i>Coptis laciniata</i>	PDRAN0A020			G4G5	S2.2	2.2
13 Pacific fisher <i>Martes pennanti (pacifica) DPS</i>	AMAJF01021	Candidate	unknown code...	G5	S2S3	SC
14 Pacific gilia <i>Gilia capitata ssp. pacifica</i>	PDPLM040B6			G5T3T4	S2.2?	1B.2
15 Pacific tailed frog <i>Ascaphus truei</i>	AAABA01010			G4	S2S3	SC
16 Point Reyes bird's-beak <i>Cordylanthus maritimus ssp. palustris</i>	PDSCR0J0C3			G4?T2	S2.2	1B.2
17 Siskiyou checkerbloom <i>Sidalcea malviflora ssp. patula</i>	PDMAL110F9			G5T1	S1.1	1B.2
18 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC
19 Wolf's evening-primrose <i>Oenothera wolfii</i>	PDONA0C1K0			G1	S1.1	1B.1
20 alpine marsh violet <i>Viola palustris</i>	PDVIO041G0			G5	S1S2	2.2
21 bald eagle <i>Haliaeetus leucocephalus</i>	ABNKC10010	Delisted	Endangered	G5	S2	
22 bank swallow <i>Riparia riparia</i>	ABPAU08010		Threatened	G5	S2S3	
23 beach layia <i>Layia carnosa</i>	PDAST5N010	Endangered	Endangered	G2	S2.1	1B.1

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24 bensoniella <i>Bensoniella oregona</i>	PDSAX02010		Rare	G3	S2.2	1B.1
25 black-crowned night heron <i>Nycticorax nycticorax</i>	ABNGA11010			G5	S3	
26 bristle-stalked sedge <i>Carex leptalea</i>	PMCYP037E0			G5	S2?	2.2
27 coast cutthroat trout <i>Oncorhynchus clarkii clarkii</i>	AFCHA0208A			G4T4	S3	SC
28 coast fawn lily <i>Erythronium revolutum</i>	PMLIL0U0F0			G4	S3	2.2
29 coast sidalcea <i>Sidalcea oregana ssp. eximia</i>	PDMAL110K9			G5T1	S1.2	1B.2
30 coastal marsh milk-vetch <i>Astragalus pycnostachyus var. pycnostachyus</i>	PDFAB0F7B2			G2T2	S2.2	1B.2
31 coho salmon - southern Oregon / northern California ESU <i>Oncorhynchus kisutch</i>	AFCHA02032	Threatened	Threatened	G4T2Q	S2?	SC
32 cylindrical trichodon <i>Trichodon cylindricus</i>	NBMUS7N020			G4G5	S2.2	2.2
33 dark-eyed gilia <i>Gilia millefoliata</i>	PDPLM04130			G2	S2.2	1B.2
34 double-crested cormorant <i>Phalacrocorax auritus</i>	ABNFD01020			G5	S3	
35 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
36 fork-tailed storm-petrel <i>Oceanodroma furcata</i>	ABNDC04010			G5	S1	SC
37 ghost-pipe <i>Monotropa uniflora</i>	PDMON03030			G5	S2S3	2.2
38 great blue heron <i>Ardea herodias</i>	ABNGA04010			G5	S4	
39 great egret <i>Ardea alba</i>	ABNGA04040			G5	S4	
40 green sturgeon <i>Acipenser medirostris</i>	AFCAA01030	Threatened		G3	S1S2	SC
41 leafy-stemmed mitrewort <i>Mitella caulescens</i>	PDSAX0N020			G5	S4.2	4.2
42 long-beard lichen <i>Usnea longissima</i>	NLLEC5P420			G4	S4.2	
43 long-eared myotis <i>Myotis evotis</i>	AMACC01070			G5	S4?	
44 maple-leaved checkerbloom <i>Sidalcea malachroides</i>	PDMAL110E0			G3G4	S3S4.2	4.2

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45 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
46 marsh pea <i>Lathyrus palustris</i>	PDFAB250P0			G5	S2S3	2.2
47 minute pocket moss <i>Fissidens pauperculus</i>	NBMUS2W0U0			G3?	S1.2	1B.2
48 northern clustered sedge <i>Carex arcta</i>	PMCYP030X0			G5	S1S2	2.2
49 northern meadow sedge <i>Carex praticola</i>	PMCYP03B20			G5	S2S3	2.2
50 northern red-legged frog <i>Rana aurora</i>	AAABH01021			G4T4	S2?	SC
51 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
52 osprey <i>Pandion haliaetus</i>	ABNKC01010			G5	S3	
53 pink sand-verbena <i>Abronia umbellata</i> ssp. <i>breviflora</i>	PDNYC010N2			G4G5T2	S2.1	1B.1
54 rhinoceros auklet <i>Cerorhinca monocerata</i>	ABNNN11010			G5	S3	
55 running-pine <i>Lycopodium clavatum</i>	PPLYC01080			G5	S4.1	4.1
56 sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	IICOL02101			G5T2	S1	
57 seacoast ragwort <i>Packera bolanderi</i> var. <i>bolanderi</i>	PDAST8H0H1			G4T4	S1.2	2.2
58 seaside pea <i>Lathyrus japonicus</i>	PDFAB250C0			G5	S1.1	2.1
59 short-leaved evax <i>Hesperievax sparsiflora</i> var. <i>brevifolia</i>	PDASTE5011			G4T2T3	S2S3	1B.2
60 snowy egret <i>Egretta thula</i>	ABNGA06030			G5	S4	
61 southern torrent salamander <i>Rhyacotriton variegatus</i>	AAAAJ01020			G3G4	S2S3	SC
62 summer-run steelhead trout <i>Oncorhynchus mykiss irideus</i>	AFCHA0213B			G5T4Q	S2	SC
63 tidewater goby <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered		G3	S2S3	SC
64 tufted puffin <i>Fratercula cirrhata</i>	ABNNN12010			G5	S2	SC
65 western lily <i>Lilium occidentale</i>	PMLIL1A0G0	Endangered	Endangered	G1	S1.2	1B.1
66 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC

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67 western sand-spurrey <i>Spergularia canadensis var. occidentalis</i>	PDCAR0W032			G5T4?	S1.1	2.1
68 western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened		G4T3	S2	SC
69 white-flowered rein orchid <i>Piperia candida</i>	PMORC1X050			G3	S3.2	1B.2
70 white-footed vole <i>Arborimus albipes</i>	AMAFF23010			G3G4	S2S3	SC
71 willow flycatcher <i>Empidonax traillii</i>	ABPAE33040		Endangered	G5	S1S2	